

WHAT IS CLAIMED IS:

1 1. A gear drive mechanism with an anti-rattle device,
2 comprising:
3 - a first gear rotatable about a first axis,
4 - a second gear rotatable about a second axis, wherein the
5 second gear meshes with the first gear, and the second axis
6 is located at a predetermined distance from the first axis,
7 - a first friction rim surface that is rotationally coupled to
8 the first gear, and
9 - a second friction rim surface that is rotationally coupled
10 to the second gear,
11 wherein the first friction rim surface and the second friction
12 rim surface are in mutual contact with each other and thereby
13 enabled to transmit a friction-based torque between each other.

1 2. The gear drive mechanism of claim 1, wherein at
2 least one of the first and second friction rim surfaces is
3 formed on the respective one of a first and second friction
4 wheel attached to one side of the respective one of the first
5 and second gears.

1 3. The gear drive mechanism of claim 1, wherein the

2 first and second friction rim surfaces have frusto-conical
3 shapes with respective first and second median radii, and
4 wherein said first and second median radii are equal to
5 respective pitch circle radii of the first and second gears.

1 4. The gear drive mechanism of claim 3, wherein said-
2 frusto-conical shapes have cone angles of substantially 25°

1 5. The gear drive mechanism of claim 3, wherein one of
2 the first and second friction rim surfaces is biased against
3 the other with a pre-tensioning force acting in a direction
4 that causes an increased contact pressure between the first and
5 second friction rim surfaces.

1 6. The gear drive mechanism of claim 5, wherein said
2 pre-tensioning force is directed axially.

1 7. The gear drive mechanism of claim 6, wherein the
2 biased one of said first and second friction rim surfaces is
3 formed on an outer circumference of a dish-shaped spring disc.

1 8. The gear mechanism of claim 1, wherein the first
2 and second friction rim surfaces are formed, respectively, on

3 first and second ring discs that are coaxially arranged on,
4 respectively, the first and second gears.

1 9. The gear mechanism of claim 1, wherein the first
2 and second friction rim surfaces are hardened.

1 10. The gear mechanism of claim 1, wherein the first
2 and second friction rim surfaces are provided with a coating.

1 11. The gear mechanism of claim 1, wherein the first
2 friction rim surface comprises two first parts arranged,
3 respectively, on opposite sides of the first gear, and wherein
4 the second friction rim surface comprises two second parts
5 arranged, respectively, on opposite sides of the second gear.